

Subject:	INFORMATION: Guidance for Incubators and Emergency Equipment	Date:	Oct 10, 1991
From:	Manager, Regulations Branch, Transport Standards Staff, ANM-114		
To:	Manager, Airframe Branch, ANM-120S		

This is reply to your memo of August 13, 1991, concerning guidance for certain items of emergency equipment with respect to protection under emergency landing conditions. Specifically, you requested guidance for incubators, used for transporting infants requiring medical care, and emergency systems installed in areas where cargo is otherwise not required to be restrained.

With respect to the incubator issue, we understand the need to balance the occupant protection aspects of the requirements with the need to provide necessary medical care. With that in mind, the following is offered as guidance. If the incubator is part of the airplane type design, we believe that every design measure practical should be taken to comply with all of the occupant protection requirements in the regulations. In particular, the incubator itself should be restrained to the applicable emergency landing loads, and should not pose a hazard to other occupants. The design of the incubator should account for inflight turbulence and should provide suitable padding/restraint to prevent injury to the infant.

With respect to decompression, the unit should be restrained in flight to minimize the probability that it might become a projectile in the event of decompression. Regarding the effects of decompression on the incubator itself, the medical purpose of the unit to isolate the atmosphere around the infant and the possible effects of decompression are in direct conflict. That is it is likely that a decompression may render the unit medically ineffective. While this is undesirable, the regulations do not address this aspect of the installation. We consider that the requirements of Part 25 (§ 25.365(g)) are satisfied if the incubator remains intact following a decompression, such that no other occupants would be injured.

Assuming that there is only one incubator on board the airplane, we do not consider the amount of oxygen that might be introduced in the event of a cabin fire to pose any additional hazard. Installation of additional incubators would require more in depth study to determine if the regulations are adequate to account for the potential fire hazard.

In response to your specific question regarding the 757 off-wing escape system, we have reviewed the relevant requirements for emergency equipment, and retention of cargo and other items of mass. While it is correct that § 25.787 does not require that cargo below or forward of all occupants be restrained to the full emergency landing loads, § 25.1411 does require that emergency equipment be protected from inadvertent damage. Thus, while there is no explicit requirement to restrain cargo in this case, there is a requirement to protect the slide inflation bottle, since it is part of the emergency escape system.

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